

BARUCH (Simon)

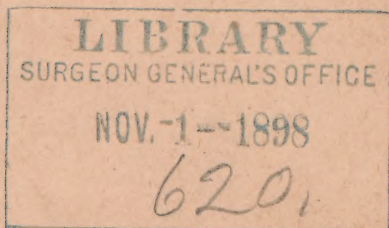
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Fever Treated With and With-  
out Cold Baths

BY  
SIMON BARUCH, M.D.,  
NEW YORK

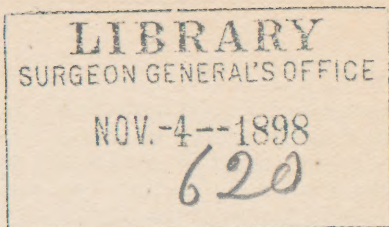
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SOME DESPERATE CASES OF TYPHOID  
FEVER TREATED WITH AND WITHOUT  
COLD BATHS.

By SIMON BARUCH, M.D.,

NEW YORK.

THE trend of medical opinion may be readily ascertained by consulting the files of a wide-awake medical journal. The true position of the bath treatment of typhoid fever within the past decennium may be gathered from the following quotations from the MEDICAL RECORD. Referring to a paper on this subject, read before the State Medical Society, the MEDICAL RECORD of February 16, 1888, says editorially, that "if the author succeeds in arousing the profession to a realization of the fatality of typhoid fever in our midst, and in directing attention to the success of the cold-bath treatment, which, for obvious reasons, has not yet obtained firm footing, the outcome may be valuable.

"It will be difficult to persuade the profession, which has been long under the dominion of the *laissez-faire* policy, to adopt the heroic method of cold bathing. The most important point made by the author seems to us the emphasis placed upon the object of the cold bath being antifebrile rather than antithermic, inasmuch as its action is chiefly directed toward the neutralization of the febrile toxæmia due to the typhoid process."

That the continued agitation of the latter point has "aroused" the leading teachers and practitioners of this city and country to the "realization" referred to by the MEDICAL RECORD is evident from the following quotation from an editorial in the issue of May 7, 1898, nine years later:



“Advocates of the bath treatment seem to be increasing in number. It is generally conceded that excellent results are to be obtained by judicious cold-water treatment, and the closer the Brand method has been followed the better the reports seem to be.”

That the MEDICAL RECORD voices the opinions of the leaders of medical thought may be gathered from discussions in our medical societies and from the records of our great hospitals.

In his first plea for the Brand bath the writer insisted upon the necessity of following the strict technique of Brand. While he still holds that when cases are seen in the first stages of the disease the latter is absolutely essential to success, a large experience has convinced him that in the later stages of cases which have not in the beginning been treated by the Brand bath a decided deviation from the latter is imperative. Some of the following histories will illustrate the proposition:

Mr. G——, aged thirty-two years, seen with Dr. Nicolai, in the fourth week of a severe typhoid. The patient had suffered during the past few days from decided cardiac failure, with its frequent accompaniment of renal inadequacy. An eminent consultant had suggested alcoholic stimulation and digitalis, but the patient's condition grew worse until his life was despaired of. I found him in a semicomatose condition, with eyes half closed, occasional twitchings of the facial muscles, subsultus tendinum, tympanites, and muttering delirium. Touching his body produced short but mild convulsive movements. The urine was scant; the quantity drawn during the past twelve hours had been ten ounces. Several bloody stools had been passed. The indications of treatment seemed to be to stimulate the failing cardiac innervation, and to remove uræmic poisoning by enhancing cutaneous and renal activity. The external use of cold water in any form was contraindicated by the condition of the cerebro-spinal centres. Hence hypodermics of strychnine, one-thirtieth of a grain every three hours unless contra-

indicated by trismus, were substituted for digitalis, and the nude patient was snugly wrapped in woollen blankets and given six ounces of cold water every two hours, alternated with six ounces of milk, until he perspired freely. During the next twenty-four hours forty ounces of urine were drawn. The first sound of the heart was stronger, despite the passage of another bloody stool. Improvement of cardiac and renal action continued and the patient made a slow recovery.

Mr. L—, aged twenty-six years, seen with Dr. Baran, had been ill with typhoid fever five weeks. The morning temperature had during the past week registered  $99^{\circ}$  F., but usually reached  $102^{\circ}$  F. or more in the evening. An eminent consultant had advised large doses of quinine and other judicious treatment, which, however, failed to control the fever. I found the patient greatly emaciated, too feeble to move in bed, but with clear intellect; pulse, 150; first sound feeble; no intestinal or other complication. The fever seemed to be due to sepsis, as was also the cardiac adynamia, both being the sequels of an exhausting typhoid which he had survived only under the most judicious management. Cold baths were out of the question. With little hope of benefit, ablutions of  $65^{\circ}$  F., carefully made, with friction over portions of the trunk only, every two hours, and guardedly repeated in accordance with reactive capacity, were advised. The patient being so feeble, the technique was carefully explained to the nurse. Intelligently and actively executed under Dr. Baran's supervision, this simple hydropathic measure, added to the judicious nutrition and stimulation already in operation, rescued this man from most desperate straits.

How much so simple a procedure may accomplish even in the earlier stages of the disease also, is illustrated by the following history:

M. W—, aged thirty-five years, seen with Dr. Simpson, had been ill five days, temperature ranging from  $102^{\circ}$  to  $106^{\circ}$  F., pulse from 120 to 140. Urine, examined by Dr. Simpson, contained albumin and



granular casts; quantity during past twenty-five hours, twenty-seven ounces. The patient was delirious, muttering, sleepless. Up to this time the treatment had been homœopathic, with alcohol sponges for temperature reduction. This was withdrawn and for it were substituted ablutions at  $65^{\circ}$  F. every two hours, and hourly compresses at  $60^{\circ}$  F.; internally, five drops of diluted hydrochloric acid in water, followed by six ounces of cold water. Under these the temperature fell to  $102^{\circ}$  F. It fluctuated between  $101^{\circ}$  and  $102.5^{\circ}$  F. for five days, gradually falling every day or two until it reached normal in four weeks, so that a tub which had been ordered proved unnecessary. The pulse never exceeded 100 after the second day of the simple hydiatic treatment, and averaged 80 during the last two weeks of the disease. The kidneys responded in a marked manner. The quantity of urine increased in one day to 60 ounces, registering afterward 87, 92, 98, 117, 113, 123, 90, 116, 82, 119, 82, 112, 81, 83, 90, 76, 86, 86, 90, 70, 80, 82, 79, 60 ounces by exact measurement. Albumin and casts disappeared in ten days. That these results were accomplished without cold baths is worthy of remark, and may encourage those who are timid in advising the latter in the more systematic hydrotherapy of typhoid fever.

The following case, from the records of the J. Hood Wright Hospital, is of interest as demonstrating how a modification of the Brand method and a substitution of affusions may lead to a successful issue in the most desperate condition:

E. J. C——, aged twenty-seven years, was sent to the hospital by Dr. Frank Daniels, after thirteen days' treatment in a boarding-house, where his temperature had ranged from  $103^{\circ}$  to  $105^{\circ}$  F., and his pulse from 120 to 150; he had most of the time muttering delirium. When admitted he was dull and apathetic, his tongue was dry and brown, the teeth were covered with sordes, the skin was cyanotic, abdomen tympanitic, subsultus marked. Three baths of  $80^{\circ}$ ,  $75^{\circ}$ , and  $70^{\circ}$  F. for fifteen minutes during the night reduced the tempera-

ture one degree but did not remove the subsultus and mental apathy. The temperature being  $102.2^{\circ}$  F., affusions at  $60^{\circ}$  F. were substituted for the bath, to; relieve stupor and improve the heart action, six ounces of milk, alternated each two hours with the same quantity of cold water, were also used. In two days the quantity of urine was forty-five ounces, containing albumin and hyaline and granular casts. The mental condition was decidedly improved by these cold affusions. Stimulants were discontinued and two ounces of strong coffee substituted before each bath, alternating with affusions, according to the condition of the patient; the former being used when the temperature reached  $103^{\circ}$  F., the latter when it was below. Compresses at  $65^{\circ}$  F. were continued hourly when the patient was awake. After seven days' treatment the mind became more clear and tympanites disappeared; the temperature was  $101^{\circ}$  F. Affusions were now given as a cardiac tonic. On the following day the temperature rose to  $105^{\circ}$  F., and the abdomen was again distended. Baths at  $70^{\circ}$  F. every three hours, with friction, given three times at four-hour intervals, reduced the temperature to  $100^{\circ}$  F., when affusions were resumed. During the next five days the temperature did not go above  $102.8^{\circ}$  F. A half-pack at  $65^{\circ}$  F. was given every hour; the temperature again rose to  $103.4^{\circ}$  F., but was reduced by one bath at  $70^{\circ}$  F. for ten minutes. The fæces now containing blood clots, baths were discontinued. After the temperature had been below  $100^{\circ}$  F. for several days, new rose spots appeared on the abdomen, and the temperature again rose to  $103^{\circ}$  F. Baths at  $70^{\circ}$  F. for ten minutes were now resumed every six hours until the temperature remained below  $102.5^{\circ}$  F. One month after the patient's admission the temperature registered normal. Six weeks later he was discharged.

Commenting upon the case before the Harvard Medical Society, Dr. Daniels, who had followed the case after its transfer to the hospital, said: "I have no doubt whatever that the man was saved by the appli-



cation of the Brand baths and cold affusions over the head and shoulder, although begun in the third week."

Mrs. P——, aged forty years, was seen with Dr. E. J. Ware at midnight, when I found the family engaged in taking a sad leave of the patient, who was said to be dying. She had been ill six weeks and had been seen by several consultants. Pulmonary hypostasis, a feeble rapid pulse, anxious countenance, absence of first sound, were some of the manifestations encountered. The temperature had recently ranged between  $100^{\circ}$  and  $103^{\circ}$  F. The most judicious treatment had been assiduously applied, and during the past few hours hypodermics of brandy had been used. Here cardiac adynamia due to sepsis again confronted us, for which the following treatment was suggested: Hypodermics of strychnine, one-thirtieth of a grain every three or four hours; wet chest compresses at  $60^{\circ}$  F., cautiously applied every hour, the method being explained to the nurse; ablutions at  $70^{\circ}$  F. every two hours; regular alternate administration of milk and water, six ounces, every two hours. These measures stimulated the failing heart, removed hypostasis, and initiated a tedious convalescence.

Miss P——, aged thirty years, was seen at Long Branch with Dr. Harry Pemberton. She had been ill with typhoid fever four weeks and had been treated with cold tub baths. She was now sleepless, actively delirious, singing and muttering constantly, failing to recognize any one. Large hypodermics of hyoscine had somewhat controlled these threatening manifestations. The temperature had also yielded, and had been running below  $100^{\circ}$  F. for several days. Suddenly it had risen to  $105^{\circ}$  F.; a new crop of spots appeared, the abdomen became more tympanitic, diarrhœa again ensued, and the whole case assumed a most desperate aspect. The first indication being to produce sleep, a wet pack at  $70^{\circ}$  F. was applied by a skilful nurse, with gratifying result. This was repeated once in twenty-four hours, and full baths at  $70^{\circ}$  F. for ten minutes, every four hours when the temper-



ature was  $103^{\circ}$  F. or over, were applied, followed by hourly trunk compresses at  $60^{\circ}$  F. The temperature and pulse improved under the treatment, until blood clots in the fæces demanded cessation of baths. The temperature rose again. Baths were resumed when blood disappeared, and they were continued for a week, when the temperature remained below  $103^{\circ}$  F. Compresses were continued until the temperature ceased to rise above  $100^{\circ}$  F. The wet pack continued to produce sleep, although the mind had not cleared before my departure from Long Branch. The patient made a slow recovery, as I was kindly informed by Dr. Pemberton. I had the singular experience of receiving a letter from this young lady, in which she expressed her gratitude to me, of whom she knew only through Dr. Pemberton's courteous mention, not remembering my presence during an attendance of ten days.

**Remarks.**—It may be noticed that in the recital of the above short histories, neither sponging nor the ice coil has any place. The writer has abandoned both. They are relics of the time when temperature was the point of attack in the treatment of typhoid fever, and cold water was applied for its reduction. Since the discovery of coal-tar products, it has become known that water cannot vie with these in antipyretic value, and that temperature reduction alone does not fulfil the therapeutic indication. Abundant clinical observation has also demonstrated that the lethal element in typhoid fever is a toxæmia which overwhelms the nervous system, according to its intensity, and depreciates all the vital organs which depend upon the integrity of the nerve centres for normal activity. To this toxæmia may be ascribed the high temperature, stupor, delirium, feeble heart action with its hypostatic conditions, renal stasis, etc., to which the patient so often succumbs. The application of cold to the cutaneous surface by ablutions, affusions, or baths produces a shock. This is followed, if judiciously graded, by a reaction, the stimulating effect of which is conveyed to the central nervous system, arousing it

from a lethargy which, in mild cases, is manifested by the rapid pulse, shallow respiration, elevated temperature, scant secretions, and in severe cases by cardiac failure, delirium, stupor, hypostasis, etc. Renewed energy is conveyed to the organs which maintain life and which have been crippled by reason of defective innervation. This is the prominent and important therapeutic principle, the recognition of which by the lamented Brand has saved many lives, and a correct understanding of which makes the physician independent of methods. The histories are cited to demonstrate the latter proposition; they show that while the full cold bath with friction is the ideal method, the ablution and affusion may with advantage be substituted for it in some cases, judiciously selected and applied. Sponging cools by evaporation. The small quantity of cold water used, and the slight friction produced by a soft sponge passed over the skin, create little or no shock and subsequent excitation of the cutaneous nerves, which in other procedures stimulate the depreciated nerve centres and counteract the lethal effect of the toxic agents circulating in the blood.

The ice-water coil cools only the part beneath it. It contracts the cutaneous arterioles, as is evident from the cyanosed appearance of the skin, and thus prevents all other effect. The continuity of its action prevents the shock and subsequent reaction required. While frequent sponging is far better than no water treatment at all, it may be advantageously discarded, when the cold bath is strenuously objected to or contraindicated, for ablutions, affusions, and trunk compresses, the technique of which may be gathered from works on hydrotherapy, and which should be closely followed.





